



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C., 20460

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MEMORANDUM

April 2, 2009

Subject: Summary of Environmental Fate and Ecological Effects Data Available to Support Proposed Outdoor Uses for DDAC

To: Barbara Madden, Risk Manager
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Registration Division

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EFED has completed a review of the available environmental fate and ecological effects data for DDAC (PC Code 069419) to support outdoor food uses. The available fate and effects studies for DDAC are presented in Tables 1-4.

It should be noted that the application letter to Barbara Madden from David Thompson states that "DDAC has been used on ornamental horticulture plants for some time in both greenhouse and field". As part of the RED process, EFED conducted a review of the ADBAC and DDAC master labels provided by BEAD, and did not find any such labeled uses for DDAC, although several labels for ADBAC had outdoor horticultural uses. Therefore, for the RED, no outdoor horticultural uses of DDAC were evaluated (D322872/D325481^a).

As indicated by USEPA PR Notice 88-2 "Clustering of Quaternary Ammonium Compounds" (February 26, 1988), it may be possible to bridge effects data among Group I quaternary cations to fulfill some of the data gaps identified below, should such data be available.

^a 'Ecological Risk Assessment in Support of the Antimicrobials Division's Reregistration of ADBAC and DDAC', dated February 3, 2006.



TABLE 1. Environmental Fate Data Requirement Table for DDAC					
OPPTS Guideline	Data Requirement	Submitted Studies (MRID)	Classification¹	Comment	Data Gap?
835.2120	Hydrolysis	41175801	Acceptable		No
835.2240	Aqueous photolysis	41175802	Acceptable		No
835.2410	Soil photolysis	42480701	Acceptable		No
835.4100	Aerobic soil metabolism	42253801	Acceptable		No
835.4200	Anaerobic soil metabolism	None			Yes
835.4300	Aerobic aquatic metabolism	422523803	Acceptable	Additional information describing how aerobic conditions were assured and maintained was required.	No
835.4400	Anaerobic aquatic metabolism	42253802	Acceptable	Additional information describing how anaerobic conditions were assured and maintained was required.	No
835.1230 835.1240	Adsorption/ desorption and leaching	41385301	Acceptable	Additional data were required on the mobility of aged residues in soil.	No
835.6100	Terrestrial field dissipation	None			Yes
835.6200	Aquatic field dissipation	None			Yes
850.1730	Fish bioconcentration	45834101	Acceptable		No

TABLE 2. Available ecological effects data for terrestrial animals exposed to DDAC.					
Guideline	Description	MRID/ Accession	Classification	Data Gap?	Comments
850.2100	Avian oral toxicity	41785803 00148078*	Acceptable	Yes*	*Avian acute oral toxicity data are not available for passerines, which are required under the new 40 CFR Part 158.
850.2200	Avian dietary toxicity	41785801 41785802 00148079* 00148077*	Acceptable Acceptable Acceptable Acceptable	No	
850.2300	Avian reproduction	None		Yes	
850.3020	Honeybee acute contact toxicity	None		Yes	

*studies not included in submitted data matrix

TABLE 3. Available ecological effects data for aquatic animals exposed to DDAC.

Guideline	Description	MRID/ Accession	Classification	Data Gap?	Comments
850.1075	Freshwater fish – Acute toxicity	41578001	Acceptable	No ¹	¹ MRID 43620001 identified in data matrix but no DER available ² MRID 4581702 identified in data matrix; not listed because it is classified INVALID ³ acute-to-chronic ratio may be used if data on FW fish ELS are available
		41578003	Acceptable		
		00147818*	Acceptable		
850.1075	Saltwater fish – Acute toxicity	None		Yes	
850.1010	Freshwater invertebrates – Acute toxicity	41578002	Acceptable	No	
		00147818*	Acceptable		
850.1025 850.1035	Saltwater invertebrates – Acute toxicity	43620001*	Acceptable	No	
		00120301*	Acceptable		
		41578004	Acceptable		
850.1400	Freshwater fish – early life stage test	None ²		Yes	
850.1400	Saltwater fish – early life stage test	None		Yes ³	
850.1	Freshwater sediment	45821701	Supplemental		

*studies not included in submitted data matrix

TABLE 4. Available ecological effects data for plants exposed to DDAC.

Guideline	Description	MRID	Classification	Data Gap?	comments
850.4100	Terrestrial Plant toxicity: seedling emergence	None		Yes	¹ only one of the four required nonvascular aquatic plants has been submitted
850.4150	Terrestrial Plant toxicity: vegetative vigor	None		Yes	
850.5400	Aquatic Plant Growth: algae	45907401 45896402*	Supplemental Acceptable	Yes ^{1,2}	² MRID 45907402 listed in submitted data matrix but has no DER
850.4400	Aquatic Plant Growth: vascular plants	None		Yes	

*studies not included in submitted data matrix